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REMARKS

Claims 1-42 are pending in the application. Claims 1-42 have been rejected under 35 U.S.C. 103(a). The rejections are respectfully traversed. All claims are believed to be in condition for allowance.

Claims 1-13, 15, and 18-42 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart et al. (U.S. Patent No. 5,337,068) in view of Verhulst (U.S. Patent No. 5,627,560). Although Verhulst is cited as the second reference, the Examiner does not refer to Verhulst in the body of the discussion of claim obviousness. Instead, the Examiner refers to Lim, without giving a proper identification to that reference. The Applicants are unable to properly respond to the rejection over Stewart and Lim without a clear identification of "Lim" in the record. As discussed in the Reply to the Office Action dated December 3, 2002, Stewart does not render the pending claims obvious. Stewart discloses a field sequential display system utilizing a backlight LCD pixel array and a method for forming an image on it. The backlit color LCD display in Stewart is formed by placing a single matrix of liquid crystal devices over a bank of red, green and blue fluorescent lamps.

On page 3, first paragraph of the Office Action, the Examiner states that it would have been obvious to modify Stewart's LCD into a very small display because "each pixel of the active matrix LCD is controlled by a TFT switch which is build [sic] on a substrate and the pixel can be made in a very small size."

Although the use of TFT switches does allow the pixels to be made in a small size, it is not obvious how to make a matrix liquid crystal display having an array of at least 75,000 pixel electrodes and an active area of less than 20 mm², as recited in independent claims 1, 10, 12, 34 and 35. As the pixel size gets smaller, the circuits and wiring need to be adjusted and modified. For example, as the pixel size gets smaller and the pixel density increases, interferences among the pixels increase. In addition, it is more difficult to manufacture displays having a small pixel size and high pixel density, as claimed in the present application.

As explained in the entered Amendment After Final of January 8, 2002, Stewart is merely concerned with forming a color LCD display by placing a single matrix of LCD devices over a bank of red, green, and blue fluorescent lamps. Stewart's description of the device and the operation of the device says nothing about the number of pixel electrodes in the display nor the active area of the display.

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Furthermore, the Examiner states that the LCD display can be made very small in size. However, the Examiner fails to explain how the pixels can be made in a very small size and to state the sources on which the Examiner is relying. As explained in the MPEP, "when a rejection is based on facts within the personal knowledge of the examiner, the data should be stated as specifically as possible, and the facts must be supported."¹ The Applicants would appreciate citation of references discussing how pixels can be made in a very small size such that an array of at least 75,000 pixel electrodes are placed in an active area of less than 20 mm².

Thus, the display having a matrix liquid crystal display having an array of at least 75,000 pixel electrodes and an active area of less than 20 mm², as recited in independent claims 1, 10, 12, 34 and 35, is not made obvious by Stewart.

Verhulst teaches a display control circuit for switching an applied voltage to the counter electrode panel to erase an image presented on the display. Nowhere does Verhulst teach, or even mention, writing the image to a matrix liquid crystal display having an array of at least 75,000 pixel electrodes and an active area of less than 20 mm². Therefore, claim 1 is not obvious in view of the combination of Stewart and Verhulst.

In discussing Lim, the Examiner states that "...Lim discloses a LCD display device 5a in combination with a light source 5c used in a view finder similar to applicant's invention. Therefore, it would have been obvious to one of ordinary skill in the art to have modified Stewart's LCD into a very small display...as taught by Lim because the active matrix LCD is controlled by a TFT switch which is build [sic] on a substrate and the pixel can be made in a very small size." Without a proper citation, the Applicants cannot address this point on its merits. As discussed above, however, it would not have been obvious to one of skill in the art to use a very small matrix liquid crystal display, because it is not obvious to design such a display to use small pixel size.

As for the secondary references, the Examiner cites Ross as teaching a LCD device with a sensor for sensing the liquid crystal and Kaneko as teaching a LCD device with a light source control. However, none of these references suggests the Applicants' display having an array of at

¹MPEP 2144.03

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least 75,000 pixel electrodes and an active area of less than 20 mm². Hence, none of these secondary references overcomes the deficiencies of Stewart for at least the reasons stated above.

Claims 14, 16 and 17 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart in view of Verhulst as applied to claims 1-13, 15, and 18-42 above and, further, in view of Ross (U.S. Patent No. 4,917,469). As noted further above, neither Stewart, nor Stewart in combination with Verhulst render claims 1-13, 15, and 18-42 obvious. The addition of Ross does not overcome the limitations in those references. Therefore, the rejection of claims 14, 16 and 17 should be withdrawn.

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CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By


Rodney D. Johnson

Registration No. 36,558

Telephone: (978) 341-0036

Facsimile: (978) 341-0136

Concord, MA 01742-9133

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